

REMARKS/ARGUMENTS

Claim Amendments

The Applicant has amended claims 8 and 14. Accordingly, claims 1-14 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 112

The Examiner objected to Claim 14 under 35 U.S.C. § 112 as failing to comply with the written description requirement. The Applicant has reviewed claim 14 and respectfully submits that it is understood and well known in the art that NAF nodes perform functions that can only be accomplished by the use of a processor and memory.

Standard nomenclature in the telecommunications field designates various parts of a telecommunications system, as nodes (including base stations, HLR, VLR, servers, etc.) where all manner of computer functions occur in order to operate the system. Figure 2 illustrates communication between a User Equipment (frequently referred to as a node) and the NAF node, both of which require a transmitter and receiver and instructions available from storage in each entity that perform operations in concert with the transmitters and receivers.

The Applicant respectfully submits that the language in the Applicant's claims with respect to a NAF node is well known by a person skilled in the art. For instance, a quick search on the Internet produced an IEEE paper "A 3GPP Open-ID Framework" (Rodolphe MARQUES¹, Ricardo AZEVEDO², Rui L. AGUIAR¹, André ZUQUETE³ *1Instituto de Telecomunicações, Universidade de Aveiro, 3810-193 AVEIRO, Portugal*) with the following diagram and explanation. As is evident in the diagram below, from the paper, the BSF and NAF functions are depicted as computers, as is the Home Subscriber Server (HSS). The Applicant respectfully

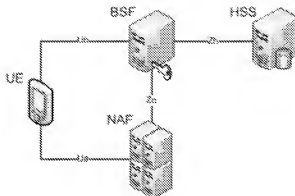


Figure 1 shows GAA entities and their interfaces. The UE (User Equipment) and the Bootstrapping Server Function (BSF) use the HTTP Digest AKA protocol for mutual authentication, over the Ub interface. They also agree on session keys that are afterwards applied between the UE and the Network Application Function (NAF) over the Ua interface. Those keys are restricted to a specific NAF. The Zn interface enables the NAF to verify if a UE was correctly authenticated against the BSF. NAF represents the HTTP or HTTPS service that requires 3GPP authentication. NAF can be divided in two parts – Authentication Proxy (AP) and the Application Server (AS). In such a case, the AP is only responsible for the authorization of the client, while the AS implements the application's functionality, relying in the authentication provided by the AP.

Claim Rejections – 35 U.S.C. § 112

Claim 8 stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter as the invention. The Applicant has corrected the deficiency in claim 8 and the Applicants respectfully submit that claim 8 is now allowable.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 1-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nevoux, et al. (US 5,412,726) in view of Uhlik (US 7,849,173). The Applicant respectfully traverses the rejection of these claims.

The present invention discloses providing an accounting certificate to a user roaming in a visited network so that the user can access services provided by a service provider outside the visited network. The user (subscriber) can buy, and be charged in real time, for goods and services purchased in both the home network as well as in a visiting (roaming) network. If the subscriber doesn't have credit on the account, nothing can be purchased. This check occurs in real time on the network level between home and the visiting network.

The service provider has a connection/relationship with the visited network so that a certificate received from the user can be redeemed by the service provider from the visited network. The operator (the visited network) does not have a relationship with the user's home network, e.g., the home network is in one country and the service provider is in another country. In this case, in the normal situation the user may be able to obtain a certificate from the user's home network, but the certificate might not be accepted by the service provider, a problem that the present invention solves. Though not discussed at length in the Specification, the service position disclosed in the present invention is essentially an offline service, where a certificate is provided and is good until used. That is, the certificate may be used at some later time, e.g., several days, after it is obtained.

The present invention allows a visited network to generate and issue accounting certificates to roaming users, but the visited network is required to authorize issuance using a standard online charging system (OCS). The service provider does not need to have a billing relationship with the home network, but the home network can still control the issuance of certificates without the demands imposed by having to manage cross-certificates, for instance. As implied by the claim limitations, the service request, authorization, accept or deny message, accounting certificate being sent to the subscriber terminal, and sending the accounting certificate from the subscriber terminal via the mobile communications network to a provider of a product or service to be paid for all happens in real time.

The Applicant respectfully submits that the Nevoux reference fails to disclose the issuance of an accounting certificate and the issuance of an accounting certificate to a subscriber in a visited network. The intent of the Nevoux patent is to provide a remote,

secure loading of prepayment means. In other words Nevoux discloses loading a user/subscriber's account with credit. The cited portions of Nevoux do not disclose an accounting certificate; the portions disclose an authentication procedure and remote loading of prepayment means. In Nevoux the SAA is an access system and CA is an authorization center and neither entity in Nevoux issues or sends an accounting certificate to the subscriber terminal as indicated in the second listed (b.) limitation. The Applicant respectfully submits that the Nevoux reference fails to disclose the issuance of an accounting certificate and the issuance of an accounting certificate to a subscriber in a visited network.

The Examiner cites the Uhlik reference as disclosing, sending a request... network; at the online charging system... data; and sending the accounting certificate ... paid for. The Applicant respectfully disagrees.

In rejecting the limitation "sending the accounting certificate... paid for" col 16, line 32-40 in Uhlik is cited. The cited portion discloses "... *the gateway sending a session summary to the aggregator server, which creates a micro-transaction to transfer the specified value from the subscriber's account to the WLAN operator's account.*" In col. 8, line 56 to col 9, line 11 the Uhlik reference is describing an embodiment: "*At some point the subscriber then accesses the Internet. An access point, AP1, receives a page from the UT1, and as part of the process of setting up a session, queries the subscriber for a deposit against future data traffic with UT1. The subscriber responds by sending the certificate to the online bank with a request that some number of units, say 2 units, be reallocated to AP1.*" The Applicant respectfully submits that the subscriber is queried for a deposit in the online bank. As indicated throughout Uhlik, an account is utilized by the aggregator to withdraw funds to pay for a service. The Applicant's claim states that the accounting certificate is sent to pay for a service; not partial payment and not a micro transaction to transfer funds from the subscriber's account to the WLAN operator's account (col 16, lines 32-40).

The Applicant respectfully contends that Uhlik fails to teach the limitations not taught by the Nevoux reference as discussed above. Also, Uhlik does not teach the use of an accounting certificate to pay for a service provided to a user in a visited network. Uhlik teaches the use of an online bank from which funds are debited to pay for the

service. As discussed above Uhlik lacks the use of an accounting certificate to pay directly to the provider for services rendered by the provider.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations (MPEP 2143).

In that regard, the Applicant respectfully submits that the Examiner's references fail to teach or suggest each and every element of the presently pending independent claims. The Applicant respectfully requests the allowance of independent claim 1 and analogous independent claim 14.

Claims 2-13 depend from claim 1 and recite further limitations in combination with the novel elements of claim 1. Therefore, the allowance of claims 2-13 is respectfully requested.

CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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Date: February 29, 2012

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